REPORT ON THE 1992 COTTAGE POLLUTION CONTROL PROGRAM

MUSKOKA-HALIBURTON

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COTTAGE POLLUTION CONTROL PROGRAM

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FOREWORD

The data included in this report were compiled and prepared by staff of the Ministry of Environment and Energy, Operations Division.

The Cottage Pollution Control Program utilizes funding from the Operations Division of the Ministry of Environment and Energy as well as from the Environmental Youth Corps to undertake reinspections of private sewage systems under Part VIII of the Environmental Protection Act, (R.S.O. 1990) and Regulation 358.

Funding for part of the 1992 work in Honey Harbour was provided by Environment Canada through the Great Lakes Cleanup Fund.

PREFACE

Brief History

The Cottage Pollution Control Program was initiated in 1970 through the Operations Division of the ministry to enforce regulations, control discharges and to undertake abatement initiatives with respect to cottage waste disposal systems.

The Cottage Pollution Control Program is authorized under Part VIII of the Environmental Protection Act which deals with measures aimed at the control and maintenance of sewage systems.

Effects of Sewage Pollution

There are two principal effects of sewage pollution which are of concern to the Ministry of Environment and Energy. The first effect is the impact that nutrient enriched waste water will have on the ecosystem. The second effect is the impact that polluted water will have on the health of humans. Each effect is important and can cause significant problems if measures are not taken to limit the contaminant source.

Figure 1 The natural environment

Sewage as it is defined in Regulation 358 is "waste of domestic origin which is human body waste, toilet or other bathroom waste, waste from other showers and tubs, liquid or water borne culinary and sink waste or laundry waste".

Aquatic Species and Nutrient Loading

The ecological balance of nature is very sensitive and is very easily altered by man. The Ministry of Environment and Energy is charged with the responsibility to ensure that the "surface waters of the Province are of a quality which is satisfactory for aquatic life and recreation".

Specific groups of aquatic life such as lake trout require an environment which is cool and which has high concentrations of dissolved oxygen.

During the spring months lake waters are generally well mixed and cool. However, during the warm summer months as the water is heated from the surface down, a layer of cooler water accumulates at the bottom of the lake with enough dissolved oxygen to sustain lake trout. During this unmixed period, the bottom water receives no oxygen from the atmosphere and species must rely on the existing supply.

As long as the amount of oxygen remains relatively stable the species can survive.

Valuable oxygen is used up when algae, which grow well in warmer waters, die and sink to the bottom of the lake. The dead algae, in addition to other dead aquatic plants, are then broken down by bacteria which require oxygen necessary for the survival of the lake trout. If too much oxygen is consumed, trout and other species of aquatic life dependent upon higher levels of dissolved oxygen may die off.

A natural oxygen balance has been maintained for thousands of years and trout have been able to survive. Problems begin when excessive fertilizing nutrients are introduced into the lake by man.

The amount of algae in a given lake is dependent upon the amount of fertilizing nutrients introduced from natural sources such as inlet streams and rivers, precipitation and surface run-off. This natural amount of nutrient enrichment can be significantly increased by shoreline development.

As a lakeshore becomes occupied by more and more cottagers and recreational developments, the natural environment of the shoreline is altered.

Subsurface sewage disposal systems add phosphorus and other nutrients to the soil. These loadings are eventually carried to the lake and contribute to the growth of aquatic plants and algae.

Some cottagers also plant grass and use fertilizers to enhance its growth. These fertilizers often make their way to the water and will feed the algae.

The Cottage Pollution Control Program attempts to control increased loadings of nutrients into the surface waters by working towards minimizing nutrient loadings from shoreline sewage systems.

Health and Safety

The Environmental Protection Act is specifically designed not only to protect the natural environment, but to ensure that the environment will provide healthy and safe living conditions for the benefit of all human beings.

Lakes and rivers offer a cottager an aesthetically pleasing environment in which to recreate and relax. However, the appearance of a clean environment may be misleading if one does not acknowledge and control microscopic problems which may potentially bring an enjoyable vacation to an uncomfortable end.

All surface water is open to potential contamination by humans, animals and birds, all of which can be carriers of disease.

Bacteria may be excreted into water bodies from the intestines of warm-blooded animals. Some of these bacteria may be pathogenic in nature causing disease. The existence of specific types of bacteria, also called indicator organisms, is also used to indicate whether viruses may be present in the water. To determine whether water is safe for drinking or for specific types of recreational activity, water is tested for the presence of indicator organisms.

Indicator organisms include coliform, faecal coliform, faecal streptococci and clostridium perfrigens. These organisms are naturally found in the intestines of humans and animals in large numbers.

Indicator organisms are mainly harmless in and of themselves but act as indicators of the potential existence of other intestinal organisms which are capable of causing intestinal disease.

If such indicator organisms are detected in water samples, there is a likelihood that disease-causing bacteria or viruses are also present.

Improperly functioning sewage systems may allow disease-causing organisms and viruses to escape into the open environment. Sewage escaping into the open environment may eventually be carried to surface and ground water by precipitation and surface runoff.

Once in the water, many of the pathogenic bacteria and viruses may survive and affect the health of those individuals who recreate or use the water for drinking.

The Cottage Pollution Control Program investigates sewage systems to help ensure that such disease-carrying organisms are prevented from gaining access to the open environment and

hence are prevented from entering surface and ground waters.

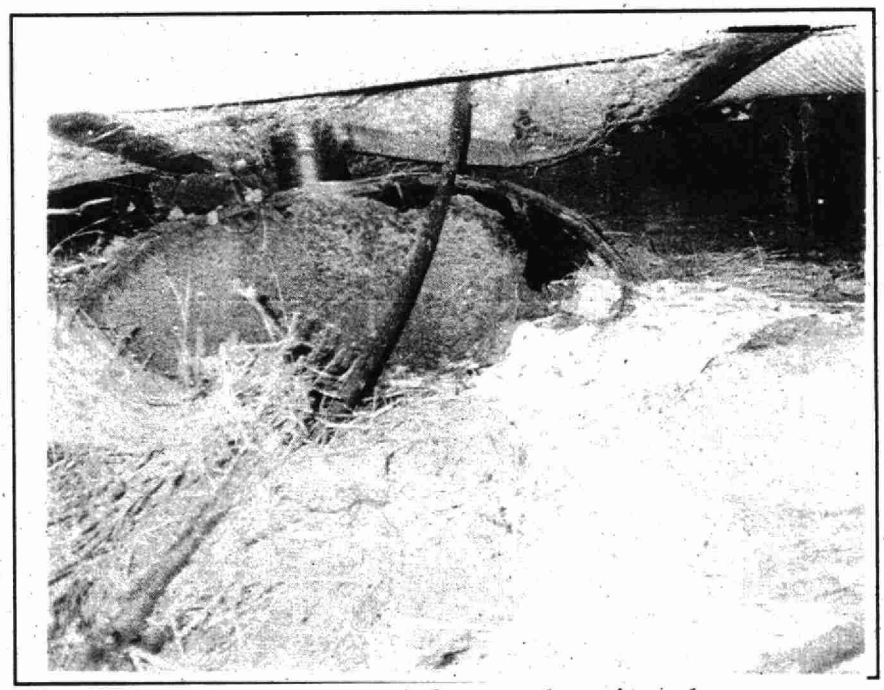


Figure 2 Sewage seeping out of a rusted septic tank

A NOTE CONCERNING SEPTIC SYSTEMS

Recent scientific research indicates that the most critical effluent components contributing to lake eutrophication are phosphorus and nitrogen. Eutrophication is the natural process of nutrient enrichment and the gradual infilling of a lake. In natural conditions, the filling in of a lake with sediments from surface water runoff and decaying plants may take thousands of years; however, this process is accelerated in its natural aging process due to human activity.

Cottages located along the shores of lakes utilize sewage systems which contribut phosphorus and nutrients to the surface and ground water. Some soils that are used to filter sewage effluent in the immediate proximity and downgradient from the system, have a limited capacity to absorb and retain phosphorus and other nutrients.

Many cottagers believe that phosphorus loading is principally a product of grey water, however, tests indicate that the amount of phosphorus contained in foods consumed and, consequently, discharged into septic tanks exceeds the amount of phosphorus found in grey water even when non phosphorus detergents are used by the household. For example, in tests, conducted by Dr. M. Brandes, Ph.D., P.Eng., to compare chemical differences between grey water and black water in an environment where non phosphorus detergents were used, it was determined that grey water total phosphorus concentrations were between 0.8 - 3.2 mg/L with a mean of 1.4 mg/L while black water concentrations were between 16-22 mg/L with a mean of 18.6 mg/L.[1]

The results of such tests help to clarify the common misperception that by simply eliminating phosphorus-based detergents the environment will be protected and all other human body related wastes will naturally decompose leaving little to no impact on the environment.

Likewise, nitrogen contributes to the eutrophication of surface water and if found in excessive amounts in ground water, it can pose a health hazard. As long as the nitrogen is able to be filtered through the soil, it has a limited environmental impact because bacteria and plants can absorb it; however, if soil filtration does not occur, as a result of direct ground discharge or escape then eutrophication and contamination can occur. Septic tanks and plumbing which have eroded, rusted or cracked can allow such contaminates easy access to surface and ground water with help from seasonal rains and spring runoff.

A number of factors affecting the soil's ability to retain phosphorus and other nutrients have been determined. They include

the soil type, the quantity of phosphorus and nutrients entering the system, ground water fluctuations, the age of the system, and the volume of downgradient soil through which the sewage passes.

Owners are advised to follow septic system use and maintenance procedures to lessen the potential for lake eutrophication and ground water contamination. Such measures will also lengthen the life of the septic system.

USE AND MAINTENANCE PROCEDURES:

A. Older existing septic systems, whose soil has reached its capacity to absorb phosphorus and other nutrients, should be replaced with new subsurface systems sufficiently back and above both surface and ground waters. For most full size septic systems in cottage country, soil can reach its capacity in anywhere from 5-20 years. This time frame will vary depending upon the type and quantity of soil.

B. Phosphate detergents should not be used.

C. Garburators should be discouraged.

D. Septic systems should not be used for disposal of paints, chemicals, solvents, or similar materials.

E. A pump-out of a proper sized septic tank should be carried out about every four or five years for seasonal cottage use, and more often with increased usage.

F. Frequent inspections should be made of all parts of the septic system to look for leaks, cracks, decay and corrosion. Such malfunctions should be corrected as soon as possible.

Adherence to these procedures will assist cottagers in maintaining their septic systems and will assist in protecting a lake capable of meeting their future needs.

SUMMARY

GENERAL

This report details the activities and results of the 1992 Cottage Pollution Control Program. The program is responsible for the detection and correction of faulty private sewage disposal systems.

Survey crews were able to conduct inspections on 1106 cottage establishments and an additional 551 sub-establishments. [Sub-establishments are additional secondary cottages, cabins or trailers located within the confines of a single property. i.e. a principal cottage establishment may have an additional bunkie (sub-establishment) for guests]. Lakes (or parts of lakes) surveyed included: Honey Harbour, Severn Sound; Little Lake, Severn Sound; Kahshe Lake, Gravenhurst; and Jack Lake, Peterborough.

Environmental Officers from the Ministry of Environment and Energy, the Simcoe County District Health Unit and the Peterborough District Health Unit initiated abatement to correct those sewage systems found to be malfunctioning.

Work is continuing to bring malfunctioning septic systems into compliance.

INTRODUCTION

GENERAL

Ontario's thousands of beautiful inland lakes provide an abundant resource for recreational enjoyment. To protect the quality of these waters, a delicate environmental balance must be maintained.

A heavy influx of people may subject a lake and its surrounding environment to great stress. Uncontrolled development and imprudent use of our recreational lakes may cause their deterioration and destroy their natural qualities.

The Ontario Ministry of Environment and Energy is attempting to bring some of these stress factors under control by instituting a variety of programs. One of these, the Cottage Pollution Control Program, was initiated in 1970 to study the cottage waste disposal problem, to evaluate existing waste disposal systems and to enforce repairs to those found to be unsatisfactory.

Detection work is conducted by trained seasonal staff (students) who survey all the systems on selected lakes. The surveyed systems are evaluated by Environmental Officers. Systems found to be malfunctioning are checked by an Environmental Officer who negotiates an agreement with the owner for corrective work to be undertaken. The corrected system is examined again to ensure compliance with the agreement and pertinent regulations.

PREPARATION

Choosing a Survey Site

Every year, the Ministry of Environment and Energy receives many requests from cottage associations to have their lakes surveyed.

Figure 3 Recreational use of our lakes

However, the ministry is only able to accommodate a limited number of surveys each season.

Therefore, a "Lake Request Rating Scale" has been developed to help establish priorities to undertake work on lakes which are in most immediate danger of environmental degradation.

Data are collected from the Ministry of Environment and Energy, cottage associations, and municipal organizations who are directly involved with the planning, use and maintenance of these various lakes.

Lakes are rated in respect to the amount of measurable water quality deterioration, the capacity to maintain an optimal aquatic habitat for specific species of fish, and by the density, age and rate of development on each lake.

Cottage association requests play an important role in these decisions because their support is important for the success of the program. All lakes are reviewed and re-rated every year to ensure that priority lakes receive appropriate attention.

Program Staffing and Training

The District Supervisor with an Environmental Officer co-ordinates program undertakings and abatement initiatives throughout the year.

In addition to the full-time Environmental Officer, each spring students are hired from local secondary schools, colleges and universities to be trained in various aspects of the Cottage Pollution Control Program.

The two principal positions required for the survey include the cottage surveyor and the Environmental Officer.

These officers require more extensive training than the surveyors as they will assist in the preparation of agreements with individual cottagers and when necessary the enforcement of the Environmental Protection Act (EPA) and Regulation 358.

Survey staff focus principally on the recognition and classification of sewage systems. They are trained to a lesser extent in the other aspects of the program.

Further, all Cottage Pollution Control Program staff are given instruction in first aid and marine safety.

Cottage Pollution Control Survey

Detection Surveys

A number of crews, each composed of two surveyors, begin the survey of the lake by preparing a description log. Each building, called an establishment, is

systematically numbered, accurately described and plotted onto a map to facilitate the location of the premises at a future time by detection crews or abatement staff. When the description logs are completed, copies are made and distributed to each crew.

The detection teams visit each establishment on the lake. The owner or occupant is interviewed and the lot surveyed. Information collected includes the following: the type of building; the number of occupants; the type of use; the water supply and treatment; the sewage disposal methods and type; the location, size and set back of onsite sewage disposal systems; the type and depth of soil and physical evidence of any malfunctioning systems. All data collected are entered onto survey forms.

From this information, the performance of the system is evaluated and the system for each establishment is given a preliminary performance classification. The classification is then verified by the Abatement Officer.

Classification of Sewage Disposal Systems

The sewage disposal systems of all premises surveyed are classified into one of the following groups:

Figure 4 Students surveying site

1. **Satisfactory**

   A system which meets the current standards of good design, construction and location.

2. **Satisfactory Performance**

   A system which may be slightly deficient in design, setback or construction with respect to current standards.

3. **Seriously Substandard**

   A system which does not meet current standards of design, construction and/or location, and is in a state of neglect or has a limited life.

4. **Nuisance** (washwater is also known as grey water and is classified as sewage)

   A system that causes grey water to be exposed to the surface of the ground either directly through a waste pipe or escaping from a leaching pit.

5. **Nuisance (toilet or solid waste)**

   A system that causes sewage to be exposed to the surface of the ground either directly through a pipe or escaping from some part of the sewage disposal system.

6. **Direct Pollution**

   A system which is permitting sewage or

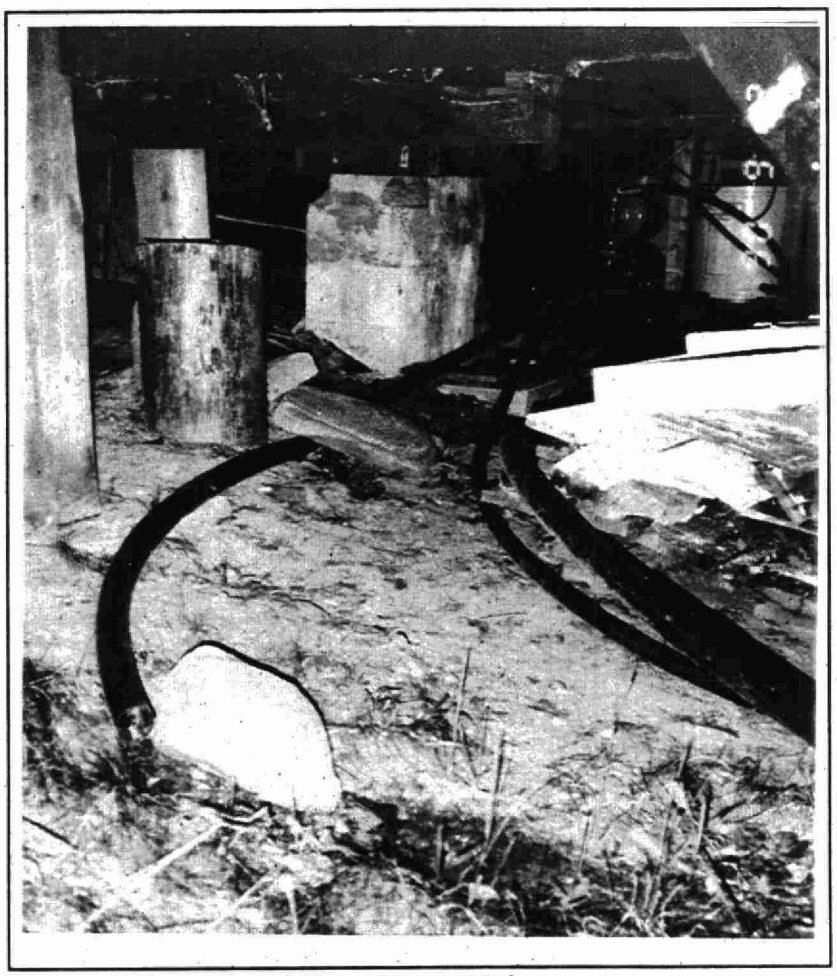


Figure 5 Example of Grey Water Nuisance

effluent to contaminate the ground or surface water.

7. **Unclassified (temporarily)**

   A system which has been given a preliminary classification by the student inspector because it is felt that none of the preceding classifications are applicable.

8. **Unclassified**

   A system which remains unclassified at the end of the survey. This category usually includes a few abandoned premises in a dilapidated condition with a system that is obviously not in use and could not be used.

ABATEMENT

General

As sewage systems are classified by the survey crews, abatement officers compare the survey results to the requirements found within the Environmental Protection Act and Regulation 358 to determine necessary corrective measures, if any.

Authorization

Full time and contract abatement officers are given authority by the Minister of Environment and Energy to act as official representatives of the Ontario Ministry of Environment and Energy.

This enables abatement officers to enter onto the properties of cottage owners, to make legally binding agreements, and when necessary to enforce the requirements of the law.

Procedure

Once a file is examined and the original classification is confirmed or altered, it is referred to an Environmental Abatement Officer if abatement of a problem is required.

The officer then interviews the owner to advise of the findings and to discuss corrective action. If the owner agrees with the findings, a corrective program is initiated.

The owner is asked to sign a "Pollution Abatement Report" which describes the problems found and the corrective measures required to be completed by a specific date.

A final inspection is carried out upon completion of the corrective work and the sewage disposal system file is appropriately reclassified. Occasionally, an owner does not comply with a correction program and legal action must be initiated.

In the case of commercial establishments, this procedure is often more complex, requiring an engineering study and the submission of plans, including a soil analysis

report, for approval.

Where a direct pollution problem exists, corrective action must be initiated immediately to prevent any further deterioration of water quality in the lake.

SEVERN SOUND 1990 - 1993

In 1990, the Ministry of the Environment, Water Resources Branch, expressed a specific concern about the rapid deterioration of water quality in the Severn Sound area of Georgian Bay.

Severn Sound has been listed as an "Area of Concern" by the U.S./Canada International Joint Commission (I.J.C.) with respect to deteriorating water quality.

In response to the I.J.C. concern, the Province of Ontario and the Federal Government, under the Canada-Ontario Agreement Respecting Great Lakes Water Quality, developed the Severn Sound Remedial Action Plan (RAP). A number of representatives from both Federal and Provincial agencies have been working with a group of concerned citizens, representing local governments and interested groups, who co-ordinate and develop water use goals under the Severn Sound RAP Public Advisory Committee.

The survey in the Severn Sound Bay area represents, in part, the Ministry of Environment and Energy's commitment to support the Severn Sound Remedial Action Plan.

The Cottage Pollution Control Program directly addressed two of the principal goals of RAP with respect to Severn Sound. The Remedial Action Plan goals are to:

1. improve water quality in Severn Sound; and

2. to maintain a healthy ecosystem in Severn Sound.

It was also felt that the physiographical make-up of the area might be causing older and unmaintained sewage systems to fail. A large percentage of the area surveyed can be described as having bare rock ridges and shallow till. The shallow till reduces the ability of septic systems to adequately filter sewage effluent.

Figure 6 Photo of Georgian Bay Cottage

Regional Physiography

Severn Sound is made up of numerous shallow bays and harbours which include, to name a few, Penetanguishene Harbour, Midland Bay, Victoria Harbour and Honey Harbour. It is located in the most southeastern part of Georgian Bay and is a very popular tourist area during the summer months.

The Severn Sound shoreline is characterized by three basic physiographical features: sand deposit plains; shallow till and rock ridges; and bare rock ridges and shallow till.

The western shores, within the jurisdiction of Simcoe County, consist, in large part, of sand deposit zones left by the last glacial period. This deposit extends from Waubashene to Nottawasaga Bay.

From Waubashene to Port Severn the area is characterized by shallow till with rock ridges.

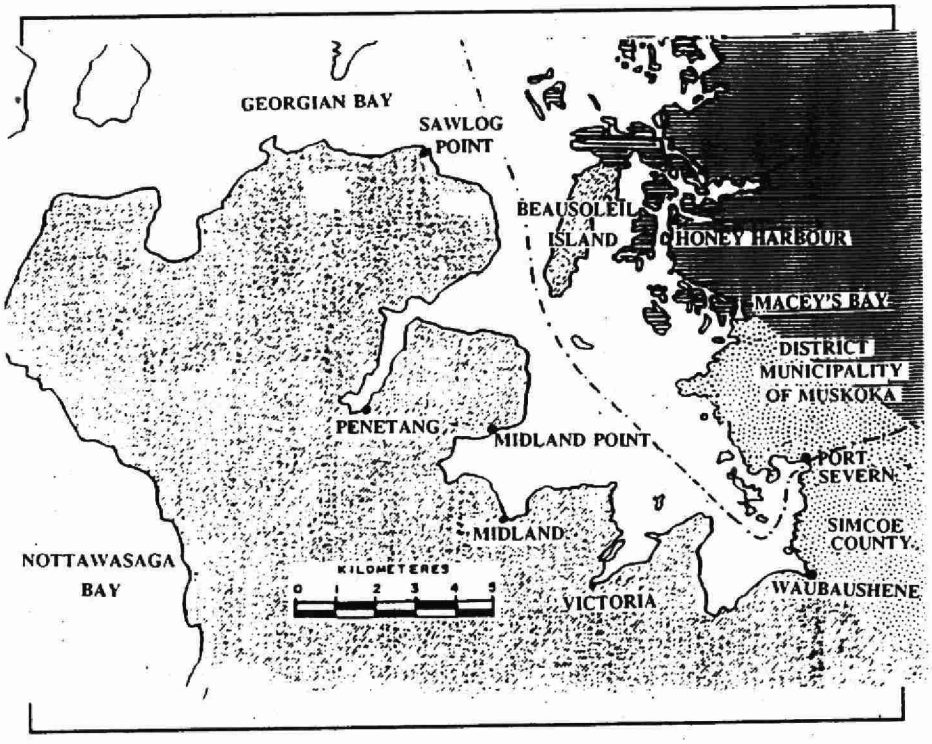
The Simcoe County shoreline, the base of which is made up primarily of sand, facilitates the easy construction of private domestic sewage systems.

This area is also distinguished by its high population levels. Many of the local residents have constructed permanent year round homes as opposed to seasonal

cottages.

Contrasting the physiographic description of Simcoe County, the District Municipality of Muskoka from Port Severn to Macey's Bay is characterized by its shallow till and rock ridges. Further, from Macey's Bay to Honey Harbour the area consists of bare rock ridges and shallow till.

The rocky shores and the scarcity of suitable till hamper the effectiveness of subsurface sewage systems. This does not excuse nor prevent a cottager from installing a proper sewage system, but it does present some difficulties and may reduce the number of alternative sewage system choices.



Sand deposit plains

Shallow till and rock ridges

Bare rock ridges and shallow till

HONEY HARBOUR
BAXTER WARD
TOWNSHIP OF GEORGIAN BAY
DISTRICT MUNICIPALITY OF MUSKOKA

Detection and Survey Results

The 1992 Cottage Pollution Control Program survey crews continued inspecting septic systems from the last 1991 surveyed establishment at Honey Harbour. From there, the crews directed their survey north through South Bay and included Little Beausoleil Island.

There were 290 septic systems inspected in the above mentioned area. Of those 290 systems inspected, 70 systems require no follow up abatement action.

A further 75 septic systems were classified as seriously substandard because they were not designed, sized, installed or maintained correctly. Information letters have been sent to the owners of seriously substandard systems to inform them of potential environmental problems.

There were 143 septic systems which required further inspection and abatement to correct malfunctions.

A remaining 2 establishments have been classified as abandoned.

(Specific break downs with respect to the classifications of septic systems can be found in Table 1).

Summary of Abatement

As of November, 1993, the Ministry of Environment and Energy has been able to bring 126 malfunctioning septic systems into compliance out of the 143 surveyed malfunctioning septic systems in the District of Muskoka. Work is continuing to bring the remaining 17 failing systems into compliance.

MINISTRY OF THE ENVIRONMENT

HONEY HARBOUR (SOUTH BAY)
1992 COTTAGE POLLUTION CONTROL PROGRAM

SCALE	AS SHOWN		
DRAWN BY	MS	DATE	DEC. 1993
CHECKED BY	T.L.H.	DRAWING NO.	

LITTLE LAKE
BAXTER WARD TOWNSHIP OF GEORGIAN BAY, TAY TOWNSHIP SIMCOE COUNTY

Little Lake is located on the boundary line of Tay Township and Baxter Ward. The lake has a perimeter of 2.26 miles and covers an area of 1078.80 acres. The lake has a maximum depth of 9 metres with the majority of the lake depth falling between 3 and 4.5 metres. The lake receives its flow from Glouchester Pool and empties into Georgian Bay at Severn Sound. The lake makes up part of the Trent Severn Waterway which on average hosts the passage of approximately 10,700 vessels annually through the Port Severn locks. There are 271 cottage and commercial establishments on Little Lake.

Detection and Survey Results

During the summer of 1992, work was initiated on Little Lake to inspect sewage disposal systems along the lake's shorelines and islands. In total, 271 cottage and commercial systems were inspected.

Of these, 271 systems, 121 require no further abatement or corrective action to bring them into compliance with current Ministry of Environment and Energy regulations.

An additional 45 sewage systems have been classified as seriously substandard because they have not been either designed, sized, installed or maintained correctly. Letters have been sent to these owners of seriously substandard sewage systems detailing the potential problems which may result from the system's continued use. We have recommended that such owners upgrade their systems to meet current standards.

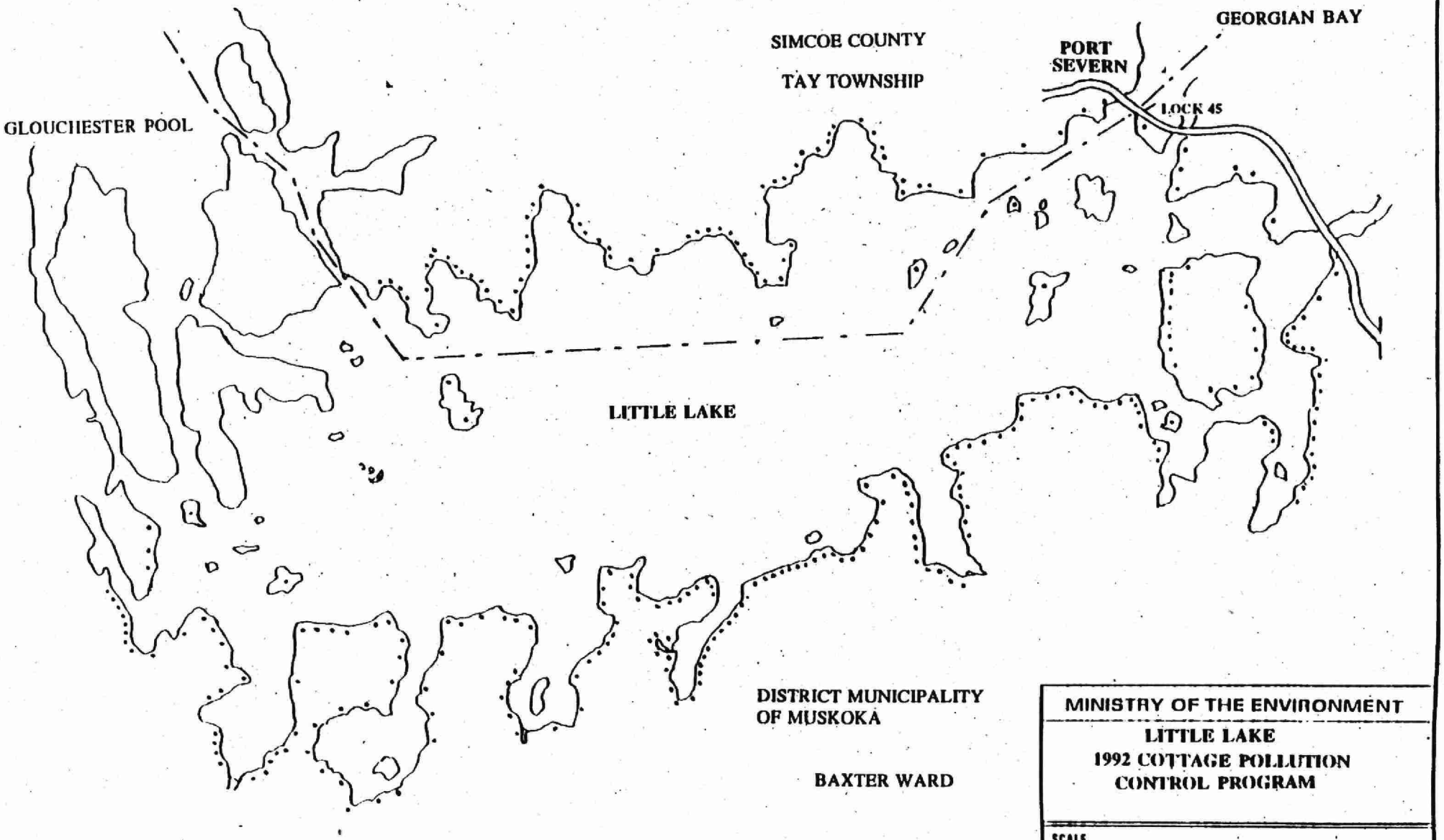
A remaining 105 sewage systems required further abatement measures to correct sewage system malfunctions.

Summary of Abatement

Of the 271 establishments surveyed, 41 resided in Simcoe County. Simcoe County's approving authority for sewage disposal systems is the Simcoe County District Health Unit. Establishment files located in Simcoe County were turned over to the Simcoe County Health Unit (Midland Branch). Of the 41 files handed over to the Health Unit, 16 files required further inspection and abatement. These 16 files make up part of the previously mentioned 105 sewage systems requiring further inspection and/or abatement.

Environmental Officers immediately began work to bring malfunctioning sewage systems into compliance. Out of the 89 sewage systems requiring further inspection and abatement, in the Muskoka-Haliburton District area, 75 were able to be corrected. As of November 1993, work is

continuing to bring the remaining 14 malfunctioning sewage systems into compliance in the Muskoka-Haliburton District area. In Simcoe County, inspectors have brought 12 of the 16 malfunctioning sewage systems into compliance with the Environmental Protection Act. Work is continuing to bring the remaining 4 malfunctioning sewage systems into compliance.



MINISTRY OF THE ENVIRONMENT

LITTLE LAKE
1992 COTTAGE POLLUTION CONTROL PROGRAM

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KAHSHE LAKE
MORRISON WARD
TOWN OF GRAVENHURST
DISTRICT MUNICIPALITY OF MUSKOKA

Kahshe Lake has a surface area of 8 square kilometres excluding 1 square kilometre of islands. The lake has a maximum depth of 20 metres, however, two-thirds of its surface area is less than 6 metres deep. The immediate drainage area of the lake, which includes the area draining into the Kahshe and Gartersnake Rivers and the small lakes through which they flow, consists of 220 square kilometres of hilly to undulating land. The land is mostly granite rock with pockets of loamy sand that offer good drainage. The shoreline is dominated by a rock and boulder till, with an occasional area of thin overburden. Kahshe Lake is part of the Georgian Bay Terminal Drainage Basin. Bass Lake, which is fed by the Kahshe and Gartersnake Rivers, flows into Kahshe Lake via the Kahshe River. Two outlets are located in the southwest part of the lake, the major one being the Kahshe River. The other outlet is South Kahshe River which joins the main branch of the Kahshe River about three kilometres downstream. The Kahshe River then flows into Sparrow Lake which flows via the Severn River into Georgian Bay.

Detection and Survey Results

The 1992 survey began where the 1991 survey finished at Klueys Bay on North Kahshe Lake road. Students inspected all establishments from Klueys Bay to Housey's Rapids. From Housey's Rapids the survey crew inspected the establishments on the southern side of the lake to just south of Hunters Bay. All islands on the lake regardless of their location were inspected.

In total, the 1992 survey crews inspected 275 cottage establishment sewage systems. Of those 275 cottages inspected, 64 require no further abatement or corrective action to bring them into compliance with current Ministry of Environment and Energy regulations.

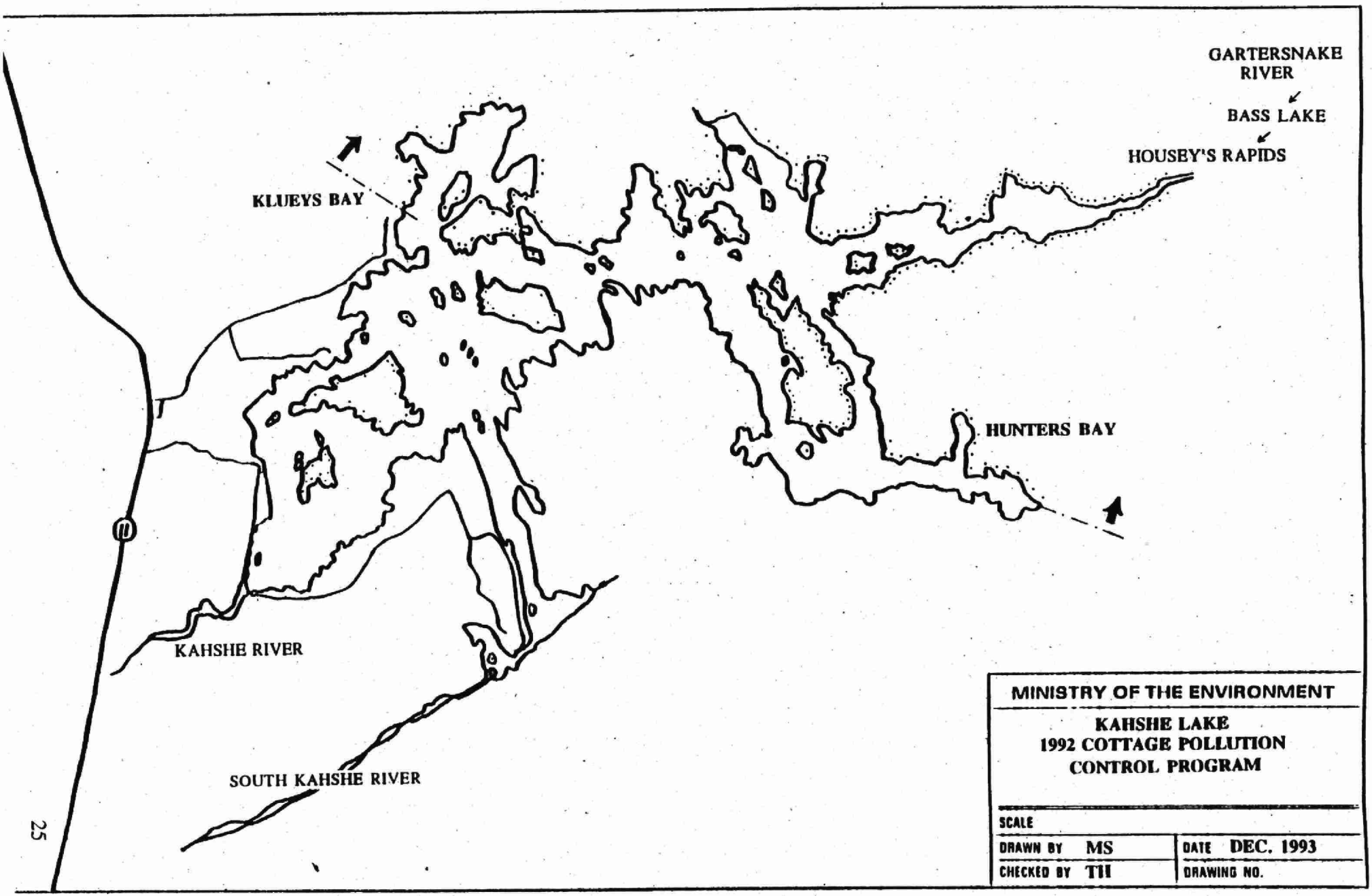
In this survey, 94 sewage systems were classified as seriously substandard because they were not either designed, sized, installed or maintained correctly. Letters have been sent to the owners of seriously substandard sewage systems detailing the potential problems which may result from the system's continued use. We have recommended that such owners upgrade their systems to meet current standards.

A remaining 117 sewage systems required further inspection to confirm survey findings and/or to initiate abatement measures to correct sewage system malfunctions. Corrections to these remaining systems will be pursued and monitored by Environmental Officers until all environmental and health concerns are resolved to the satisfaction of the Ministry.

SUMMARY OF ABATEMENT

Environmental Officers immediately began work to bring malfunctioning sewage systems into compliance with the Environmental Protection Act. Of the 117 sewage systems which required further abatement and inspection, 102 were able to be corrected. As of November 1993, work is continuing to bring the remaining 15 malfunctioning sewage systems into compliance.

As a side note, there are three remaining abatement files from the 1991 Cottage Pollution Control Program survey which are expected to be closed in the spring of 1994.



JACK LAKE
BURLEIGH AND METHUEN TOWNSHIPS PETERBOROUGH COUNTY

The Cottage Pollution Control Program conducted a survey of a Peterborough Lake for the first time since the early 1980's.

Promoted and supported by the Peterborough County Coalition of Lake Associations, the Cottage Pollution Control Program initiated the reinspection of 270 cottage and commercial establishments on Jack lake. The physiography of the lake basin is characterized by bare rocks and shallow soil. Jack Lake has a surface area of 1221.3 hectares with an average depth of 10 metres and a maximum depth of 42.7 metres. Self Help data indicates that because Jack Lake is divided by numerous islands and narrows, different water quality characteristics and flow patterns exist. The lake receives its inflow from Redmond and Apsley Creeks and the lake subsequently flows southward into Stony Lake on the Trent River system. Self Help data suggest the lake is moderately enriched to enriched; however, problems with sampling procedures have made accurate assessments of water quality difficult to substantiate..

Detection and Survey Results

During the month of August, work was initiated on the northern section of Jack Lake.

In total, 270 sewage systems have been inspected. Of that, 69 systems require no further abatement or corrective action to bring the system into compliance with current Ministry of Environment and Energy regulations.

An additional 59 sewage systems have been classified as seriously substandard because they have not been either designed, sized, or installed correctly. These are systems which may be polluting; however, at this time, there is no ground or surface evidence to indicate decisively that such a situation exists.

The Peterborough Health Unit has accepted responsibility to contact owners in order to inform them of the potential problems which may result from the systems' continued use. The Health Unit will recommend that owners upgrade their systems in order to meet current environmental standards.

A remaining 142 sewage systems required further inspection and/or abatement measures to correct sewage system malfunctions.

Within the total 270 sewage systems, there were 5 commercial establishments which had additional sub-establishments in the form of rental cabins or trailers. There were 185 sub-establishments in total. These sub-establishments as well as the principal 270 establishments are broken down into classifications in the following table:

Summary of Abatement

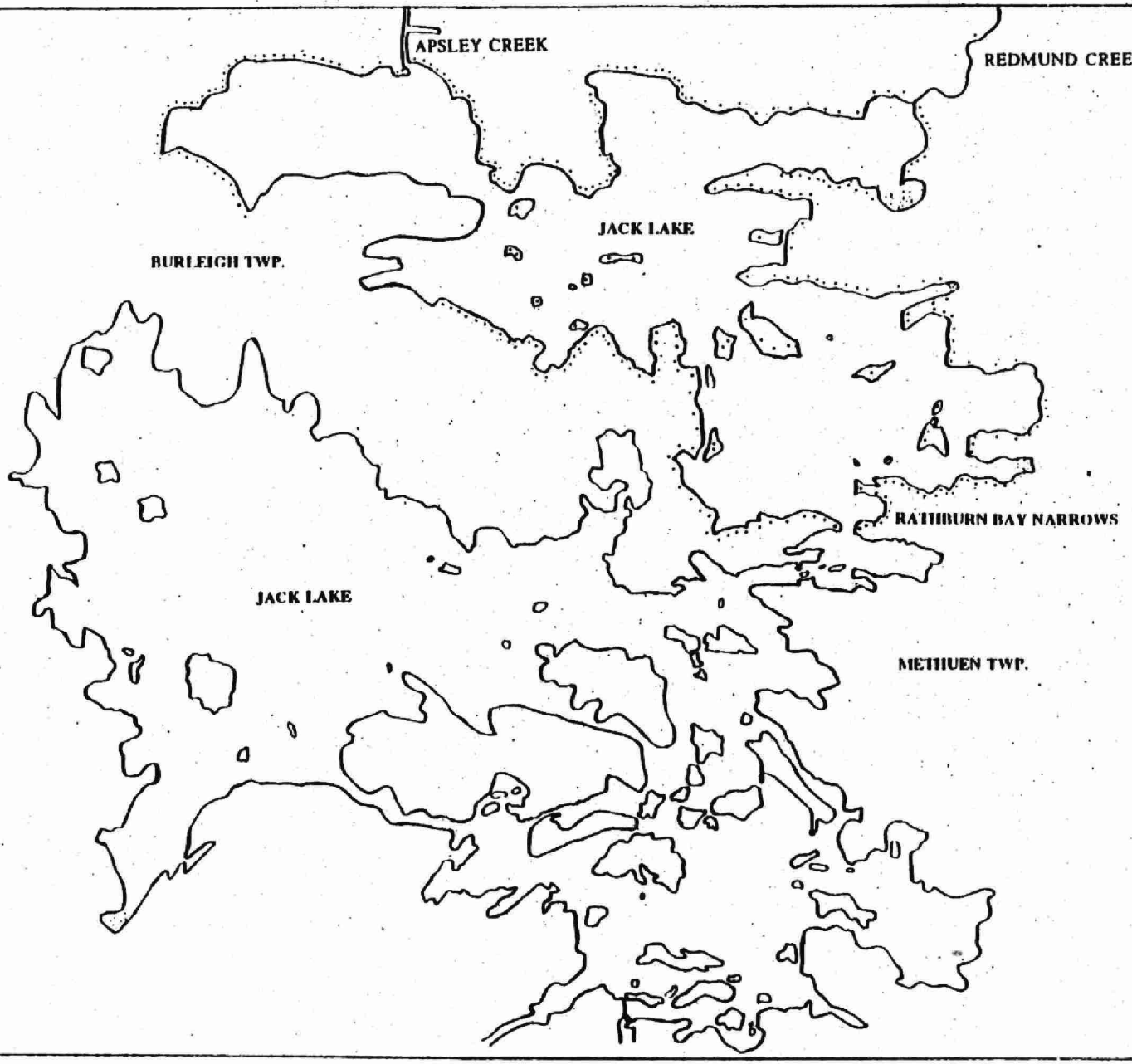
Correction to these remaining sewage systems has been pursued by the Peterborough Health Unit inspectors. All but 22 of the 142 sewage systems found to have environmental and health related concerns have been resolved.

Health Unit inspectors began work to bring the malfunctioning sewage systems into compliance with the Environmental Protection Act. Work continued in 1993 to bring the remaining 22 sewage systems into compliance.

Cottage Pollution Control Program
Survey Findings
JACK LAKE
PETERBOROUGH 1992

CPCP CLASSIFICATION	PRIVATE PROPERTY INSPECTIONS	COMMERCIAL INSPECTIONS	TOTAL INSPECTIONS
CLASS 1	6	10	16
CLASS 2	63	115	178
CLASS 3	59	38	97
CLASS 4	12	6	18
CLASS 5	88	16	104
CLASS 6	0	0	0
CLASS 7	41	0	41
CLASS 8	1	0	1
GRAND TOTALS	270	185	455

* Commercial inspections include the five commercial establishments located on Jack Lake.



MINISTRY OF THE ENVIRONMENT

JACK LAKE
COTTAGE POLLUTION
CONTROL PROGRAM

SCALE NOT TO SCALE	
DRAWN BY M.S.S.	DATE DEC.1993
CHECKED BY T.H.	DRAWING NO.

PREVIOUS YEAR'S SURVEY ABATEMENT PROGRESS

Each year as the Cottage Pollution Control Program draws to a seasonal close, a number of substandard sewage systems remain uncorrected.

For numerous reasons, such as not being able to locate an owner or difficulty in choosing a new sewage system location, cottage sewage problems are left to the next year to be corrected. Occasionally, some of these problems may take more than one year to resolve.

These records are reviewed and compiled each year and Environmental Officers are assigned files with the directive to ensure that corrective action is undertaken to resolve sewage problems.

In some cases, Environmental Officers will be compelled to pursue legal action to force reluctant or defiant owners to act in the public interest. Generally, this does not occur until reasonable paths of persuasion have been pursued.

At the beginning of 1992, there were approximately 288 outstanding cottage files requiring abatement on 16 lakes. During the course of the summer and on into the fall, 179 of those 288 cottage sewage problems were corrected.

By November 1993, 87 of the remaining 109 previous outstanding cottage problems were corrected. The remaining 22 problem files are expected to be either corrected by spring 1994, or recommended for legal action.

CONCLUSIONS

The Ministry of Environment and Energy through the Cottage Pollution Control Program is making every effort to ensure that Ontario waters are healthy, safe and environmentally secure.

During the 1992 inspection season, 1106 principal establishment sewage systems were inspected. Out of that total, 324 (29.3%) sewage systems were found to meet present regulatory requirements while 509 (46.0%) sewage systems were either found to exhibit some malfunction or required more indepth inspection. There were also 273 (24.7%) sewage systems which did not meet present design and set back requirements, however, showed no visible signs of malfunction at the time of inspection.

As of November 1993, out of 509 malfunctioning sewage systems surveyed in 1992, 437 were corrected. Seventy-two (72) outstanding files requiring corrective action remain.

There were in addition to the 1992 files, 87 outstanding abatement files from previous years. Of the 87 outstanding abatement files, 65 have been corrected. Twenty-two (22) outstanding files remain.

LAKES SURVEYED

Muskoka - Haliburton - Simcoe

YEAR OF SURVEY	LAKE	NUMBER OF SYSTEMS INSPECTED
1970	Sparrow	302
1971	Muskoka (Muskoka Bay)	270
1971	Leonard	112
1974	Bass (Ryde)	23
1974	Clear (Wood)	155
1974	Harp	78
1974	Kahshe	481
1974	Twelve Mile Lake	168
1974	Wood	205
1975	Muskoka (Bala Bay)	280
1975	Dark	38
1975	Gull (Muskoka)	138
1975	Gull (Haliburton)	413
1975	Silver	37
1975	Three Mile	542
1976	Joseph (Ames Point)	25
1976	Muskoka (Sandy Bay)	17
1976	Dickie	121
1976	Go Home Bay	119
1976	Loon	175
1976	Muldrew	378
1976	Ril	140
1976	Turtle	63
1977	Honey Harbour (South Bay)	834
1977	Muskoka (Milford Bay)	292
1977	Paudash (Haliburton)	364
1977	Joseph (Woodroffe Bay)	44
1978	Honey Harbour (North Bay)	476
1978	Severn River	833
1978	Indian River	67
1979	Esson	117
1979	Kashagawigamog (North Half)	533

YEAR OF SURVEY	LAKE	NUMBER OF SYSTEMS INSPECTED
1979	Muskoka	463
1979	Miskwabi	78
1979	Nine Mile	138
1980	Black Lake	57
1980	Kashagawigamog (South Half)	273
1980	Muskoka	175
1980	Soyer's	142
1980	Stewart	97
1981	Morrison	175
1981	Muskoka (Broadley Point)	239
1981	Salerno	165
1981	Sunny	56
1982	Boshkung	348
1982	Lake of Bays (Narrows)	127
1982	Muskoka (East Bay, Kettles)	227
1982	St. George	105
1982	Little Dudman	69
1982	Long	88
1982	Negaunee	15
1983	Clement	35
1983	Haliburton (South Bay)	124
1983	Lake of Bays (Narrows cont'd)	138
1983	Long (Muskoka)	110
1983	Muskoka (Dudley Bay)	132
1983	Oxbow	134
1983	Waseosa	139
1983	Young	67
1984	Lake of Bays	187
1984	Twelve Mile	249
1984	Little Boshkung	81
1985	Lake Muskoka (Browning Island)	119
1985	Lake of Bays	260
1985	Horseshoe	289
1985	Lower Paudash	256
1986	Hall's Lake	275
1986	Lake of Bays	195
1986	Mountain	260
1986	Six Mile (Year 1)	153
1987	Big Hawk	164
1987	Community of Dorset	148

YEAR OF SURVEY	LAKE	NUMBER OF SYSTEMS INSPECTED
1987	Leech	121
1987	Little Hawk	131
1987	Raven	155
1987	Six Mile (Year 2)	252
1987	Wolf	78
1988	Brady	73
1988	Koshlong	258
1988	Peninsula	366
1988	Six Mile (Year 3)	376
1989	Canning	286
1989	Kushog	544
1989	Lake of Bays	282
1989	Menominee	96
1990	Severn Sound (Simcoe)	530
1990	Severn Sound (Muskoka)	428
1991	Severn Sound (Penetang)	473
1991	Muskoka Bay	297
1991	Kahshe	218
1991	Eagle	159
1991	Moose	36
1991	Harp	91
1992	Honey Harbour	290
1992	Little Lake	271
1992	Kahshe Lake	275
1992	Jack Lake (Peterborough)	270 + (185 sub-establishments)
	TOTAL	20,748

**** Sub-establishments are not included in the total number of systems inspected.***

1992 CPCP Survey	CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5	CLASS 6	CLASS 7	CLASS 8
HONEY HARBOUR TOTAL = 290	3	67	75	23	50	1	69	2
LITTLE LAKE TOTAL = 271	8	113	45	18	42	2	42	1
KAHSHE LAKE TOTAL = 275	8	56	94	26	67	0	23	1
JACK'S LAKE TOTAL = 270	6	63	59	12	88	0	41	1
GRAND Total 1106 ***Sub-Est's 185** ---------- **1291**	25	299	273	79	247	3	175	5

* *Sub-Establishments* ***Means additional secondary cottages, cabins, or trailers, with a sleeping capacity. These sub-establishments are located within the confines of a single property. i.e. a principal cottage establishment may have an additional bunkie (sub-establishment) for visitors to the cottage. The principal cottage will be considered an establishment and the bunkie a sub-establishment.***

1. Ontario Ministry of the Environment, Pollution Control Branch, Characteristics of grey water and black (toilet) waste water from the same house, 1977) paper prepared by M. Brandes, Ph.D., P.Eng., June 1977.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